

## 6030 Bid Addendum

Page 1 of 2

ADDENDUM NO.: 1

DATE OF ADDENDUM: September 16, 2014

## State Veterans' Cemetery Expansion and Improvements Middletown, CT

**BI-C-283** 

Original Bid Due Date / Time:	September 24, 2014	1:00 PM	
Revised Bid Due Date / Time:	N/A	N/A	
Previous Addendums:	None		

#### TO: Prospective Bid Proposers:

This Addendum forms part of the "Contract Documents" and modifies or clarifies the original "Contract Documents" for this Project dated September 3, 2014. Prospective Bid Proposers shall acknowledge receipt of the total number the Addenda issued for this Project on the space provided on Section 00 41 00 Bid Proposal Form. Failure to do may subject Bid Proposers to disqualification.

The following clarifications are applicable to drawings and specifications for the project referenced above.

#### Item 1

See attached sign in list

#### Item 2

The bidders shall note that there can be scheduled up to five (5) thirty (30) minute funerals on days Monday to Friday from 9 am until 2 pm and on Saturday from 9 am to noon. The successful bidder may be asked to stop work briefly if it will impact a service. All this will be coordinated on a cast-to-case basis with the successful bidder's site superintendent and Reed Johnson of the DVA.

#### Item 3

The bidders shall note that they may place a construction field office trailer and portable toilet facility adjacent to and on the north side of the construction entrance noted on Sheet CE.1.2

#### Item 4

The bidders shall note that a General Permit (GP) Registration Form for the Discharge of Stormwater and Dewatering Wastewater Associated with Construction Activities has been filed with the State of Connecticut Department of Energy & Environmental Protection and the GP and GP responsibilities will be transferred to the successful bidder prior to construction. DAS/DCS has paid the \$3,000 permit fee.

#### Item 5

The bidders shall note that demolition permits are not required.

#### Item 6

The bidders shall note that are active storm drainage systems on site that must be maintained during the duration of the project to adequately drain the site. See Sheets CE.1.1 and CE.1.2 for locations of temporary sediment control measures and sheet C.0.2 for erosion control notes.

#### Item 7

See SKA1.1-01 & SK 1.2-01 which were prepared in response to CT DCS comments.

#### Item 8

The project title/number needs to be indicated on all communications

#### Item 9

Page 2 of 2

ADDENDUM NO.: 1

DATE OF ADDENDUM: September 16, 2014

Only attendees of the pre-bid meeting are eligible to bid on this project

#### Item 10

This is a 365-day project and is expected to start in the Spring 2015

#### Item 11

Due to time constraints on this specific project, the Owner will NOT consider requests for Equals or Substitutions prior to the receipt of the Bid

#### Item 12

Every request must be received by the end of business 5:00pm on Tuesday 09/16/2014 and all questions will be answered by addendum on 09/17/2014

#### <u>Item 13</u>

PMWeb is to be utilized for this project

#### Item 14

Small Business Enterprise (SBE) Set Aside Participation is 25% / Minority Business Enterprise (MBE) Participation is 6.25%

#### Item 15

See attached Geotechnical Report.

All questions must be in writing (not phone or e-mail) and must be forwarded to the consulting Architect/Engineer (BL Companies-Ray Gradwell at (860) 249-2400 with copies sent to the CT DCS Project Manager (Ron Zanobi) at (860) 713-7261

End of Addendum No. 1

Mellanee Walton, Associate Fiscal Administrative Officer

**Department of Administrative Services** 

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On Behalf of the Division of Construction Services

Department of Administrative Services

Division of Construction Services

## 6020 Bid Phase Meeting Attendance Log

CTDAS/DCS Project No.:	Page 1 of 3
Date:	
Meeting Start Time:	10:00 AM
Meeting Location:	State Veteran's Cemetery, Middletown, CT
Meeting Purpose:	Pre-Bid Meeting Post Bid Review Meeting Other:
Name: Cours Francis Pro	Title:
Company/Department:	E-mall.
Street: 165 CATOOL ALK	Phone:
City/State/Zip  HMTPUN C	FAX:
Name: SARMY TIBLE	Title: Ast. C.M.
Company/Departmenty	Grap Derney Q 17:500
Street: 105 Capital Are Rm 460	840 713 58 EZ
City/State/Zip?	FAX: 840 913 726(
Name: VICTOR GRANDICONI	Title: Betimator
Company/Department:	E-mall; VICTOR & ANNUILI. COM
street: _147 Holo RD	Phone: 860-644-2427-
City/State/Zip MAM 4+605+EN CT 06 042	860-644-650S
Name: CMa Drugu	Title: CW
Company/Department:	E-mall: 1 brund (04
Street: (CuoNIPW Dr.	Phone: 860 671-9900
City/State/Zip +aminger (T 0603)	FAX: 860 676-0455
Name: Sames Nanninger	Title:
Name: Somed Nann: naer Company/Department: Bonton Construction	E-mail:
Banton Construction Street: 339 Washington Aug City/State/Zip	Phone:
North Haven, CT	FAX:
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Department of Administrative Services



Division of Construction Services

## 6020 **Bid Phase Meeting Attendance Log**

Page 3 of 3

CTDAS/DCS Project No.: 8I-C-283

Date: 09/11/2014

Meeting Start Time: 10:00 AM

Meeting Location: State Veteran's Cemetery, Middletown, CT

Name: Rock Lyasil	Title: St. Matu
Company/Department: F54-ma401	E-mail: Keel C) Noselboilder . Co
Company/Department: Estimator Nescel Bul Hers	
Street: 51 OZick Dr Durkum Ct	Phone: 800 344 56 15
City/State/Zip	FAX:
or	
Name:	Title:
YAROLD GREDIFICIO	The control of the co
Company/Department: VAZ QUAUTY WURKS, LLC	E-mall: davidge yor crumus 1
Strage	Phone:
179 William Shast City/State/Zip Bet of 06008	Phone: (201) 336-5229
City/State/Zip	FAX:
	(03) 333-5227
Name: Pete Colpellui) Company/Départment:	Title: Estimator
Company/Départment	F.mail:
JA LOSA CONSTRUCTION	petecjarosa com
	Phone:
City/State/Zip	203 879 3445 FAX:
Wolcott Ct 067/1	203 871 0760
Name:	Title: FRESIDO
BRIAN KRONEUROPGHO	
Company/Department:	E-mall;
FRONC UPSCRUZ & SOUS	BAIAUK CKRONENBOODEDOUS COM
175 INDUSTRIAL FORK BO	GCD- ZHT-KCS
City/State/Zip	I FAX:
MIDDUETOWN, CT 06457	343-03A
Vame:	Title:
BAIAN GONBOTZ Company/Department;	GEN. PIGR.
H.E. Butter Censt. Co.	E-mail: BG & KBUTLERCONSTRUCTION, COM
itreet:	Phone:
Street: 984 PORTLMO-COBALT RD. City/State/Zip	860 342.3880
Ny/9tate/Zip. VOATLAND, CT 06480	FAX:
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Jame: PETEN ZLOTHILK Company/Department: ZVOTNICK CONTRULTION	E-mail:
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## 6020 **Bid Phase Meeting Attendance Log**

Page 3 of 3

CTDAS/DCS Project No.: BI-C-283

Date: 09/11/2014

Meeting Start Time: 10:00 AM

Meeting Location: State Veteran's Cemetery, Middletown, CT

Name: DOMILICE COUTERAL	Tille:
Company/Department: スト Co かんいさて	LANDSCARF ARHITECT  Emall:  Celtinda @ blomponnes.com  Phone:  860-249-2200
ISO TRUMBUL STRUT	Phone: 249-779
City/State/Zip LANTFORD CT 06103	FAX:
Name:  (A) Cyllonicit  Company/Department;	Tille:  Projectivel & b companies. C  Phone:  E-mail:  Phone:  E- · 249 - 2725
BL COMPANIES	rarelle b/conteres
City/State/Zip	25- 249-22
HANTEUR CT 06/03	FAX:
Name:	Title:
Company/Department;	E-mall:
Street:	Phone:
Clty/State/Zip	FAX:
Name:	Title
Company/Department:	E-mall:
Street:	Phone:
City/State/Zip	FAX:
Name:	Title:
Company/Department:	E-mall:
Street:	Phone:
City/State/Zip	FAX;
Name:	Title;
Company/Department:	E-mall:
Street:	Phone:
City/State/Zip	FAX

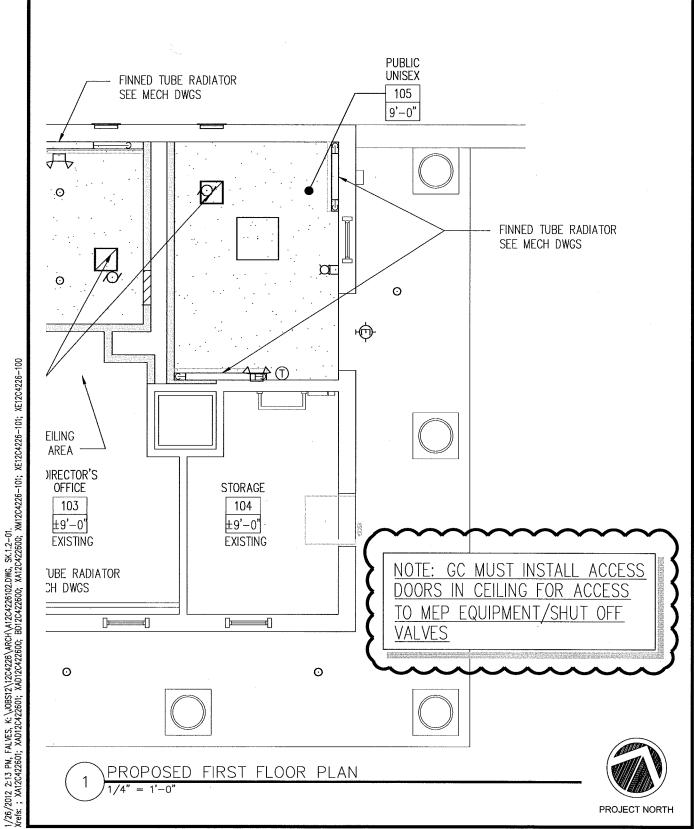
٧٥.	ITEM	MANUFACTURER	MODEL NO.	REMARKS
A)	TISSUE DISPENSER MULTI ROLL	BOBRICK	B-2888	MOUNT UPPER EDGE 1-1/2" MIN. BELOW GRAB BAR, CENTER 8" IN FRONT OF TOILET
B1)	PAPÉR TOWEL DISPENSER & WASTE RECEPTACLE	BOBRICK	B-39003	RECESSED - 12G CAPACITY WASTE CONTAINER
B2)	PAPER TOWEL DISPENSER & WASTE RECEPTACLE	BOBRICK	B-43699	SURFACE MOUNTED - 3.0G CAPACITY WASTE CONTAINER
0	SOAP DISPENSER	BOBRICK	B-2111	CLASSIC SERIES, 40 OZ. CAPACITY. SURFACE-MOUNTED
0	SOAP DISPENSER	SLOAN	SJS 1150	SENSOR-ACTIVATED WALL MOUNT FOAM SOAP DISPENSER
D	MIRROR (48" X LENGTH OF COUNTER)	BOBRICK	B-2908	SERIES CHANNEL-FRAME POLISHED STAINLESS STEEL
<b>E1</b> )	42" SIDE GRAB BAR	BOBRICK	B-6806X42	42" X 1-1/2" AT 33" TO 36" A.F.F. MAX. STAINLESS STEEL SATIN FINNEDISH, CONCEALED MOUNTED.
2	36" REAR GRAB BAR	BOBRICK	B-6806X36	36" X 1-1/2" AT 33" TO 36" A.F.F. MAX. STAINLESS STEEL SATIN FINNEDISH, CONCEALED MOUNTED.
E3)	18" VERTICAL GRAB BAR	BOBRICK	B-6806X18	18" X 1-1/2" AT 39" TO 41" A.F.F. MAX. STAINLESS STEEL SATIN FINNEDISH, CONCEALED MOUNTED VERTICAL.
<b>E4</b> )	29" SWING UP GRAB BAR	BOBRICK	B-4998	29" SWING UP GRAB BAR AT 36" A.F.F. MOUNTING METHOD SHALL RESIST 250# SHEAR TENSILE & MOMENT FORCES.
Ð	UNDER LAVATORY GUARD		_	<u>-</u>
(e)	SIGNAGE		_	. <del></del>
$\mathbb{H}$	CALL FOR AID	-	-	-
(-)	COAT HOOK	BOBRICK	B-2116	-
K)	5' UTILITY SHELF			60" X 18" STAINLESS STEEL UTILITY SHELF
	VITREOUS—CHINA WATER CLOSET — WC1		-	ELONGATED, SIPHON-JET TYPE, WALL HANGING, BACK OUTLET W/FLUSHOMETER VALVE, MAX. 1.6 GPF
M	VITREOUS—CHINA WATER CLOSET — WC2			ELONGATED, SIPHON-JET TYPE, FLOOR MOUNTED, FLOOR OUTLET W/CLOSED-COUPLED, GRAVITY TANK, MAX. 1.6 GPF
(N	VITREOUS-CHINA LAVATORY — LAVI	_		ACCESSIBLE, WALL MOUNTED
9	VITREOUS—CHINA LAVATORY — LAV2	_		ACCESSIBLE, UNDER COUNTER-MOUNTING, RECTANGULAR, 17"X 13" X 6 DEEP BASIN



ARCHITECTURE
ENGINEERING
ENVIRONMENTAL
LAND SURVEYING
355 Research Parkway
Meriden, CT 06450

STATE OF CONNECTICUT STATE VETERANS CEMETERY MIDDLETOWN, CONNECTICUT PROJECT NO. BI-C-283

Title:	Sk	(A1.	.1-01
CAD File:	A12C4226101	Date:	9/12/2014
Project No.	1204226	Scole:	1/8" = 1'-0"
Checked By:	SJI	DWG. Ref;	A.1.1
Drawn By:	FA	Origin:	_



Companies

ARCHITECTURE ENGINEERING ENVIRONMENTAL LAND SURVEYING 355 Research Parkway Meriden, CT 06450 (203) 630-1406 (203) 630-2615 Fax

STATE OF CONNECTICUT STATE VETERANS CEMETERY MIDDLETOWN, CONNECTICUT PROJECT NO. BI-C-283

Drawn By:	FA	Origin:	_
Checked By:	SJI	DWG. Ref:	A.1.2
Project No.	12C4226	Scole:	as noted
CAD File:	A12C4226102	Date:	9/12/2014
Title:	S	K.1	.2-01



## GEOTECHNICAL | CONSTRUCTION | ENVIRONMENTAL ENGINEERS and SCIENTISTS

March 12, 2014 File No. 0277-010.00

Mr. Raymond Gradwell, P.E. BL Companies 150 Trumbull Street, 6th Floor Hartford, Connecticut 06103

Re: Geotechnical Engineering Report

Veterans Administration Cemetery Improvements

Middletown, Connecticut

Dear Mr. Gradwell:

Geo**Design**, Inc. (Geo**Design**) is pleased to submit our geotechnical engineering report for the proposed improvements to the Veterans Administration Cemetery located at 317 Bow Lane in Middletown, Connecticut. Refer to Figure 1, Locus Plan, in Appendix 1 for the general site location.

#### PURPOSE AND SCOPE

GeoDesign completed a subsurface exploration program and geotechnical engineering evaluation for the proposed improvements to the Veterans Administration Cemetery. Our services included characterizing the subsurface conditions in the project area, performing geotechnical engineering analyses, and providing geotechnical design and construction recommendations for the project. Our services were provided in accordance with our November 8, 2013 proposal, which was based, in part, on a 120-scale sketch provided by your office depicting the current cemetery layout and proposed improvement locations (Sketch Plan SK-100, dated August 3, 2012).

Elevations (El.) stated in this report are in feet and are based on grading shown on an undated 120-scale topographic plan provided by BL Companies.

#### EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS

The site is an existing cemetery that is occupied by landscape areas and site features that include: a main access roadway; a small parking lot; sidewalks; gravesites; and several small benches and other structures. The site topography generally slopes down from west to east with slopes ranging from about 4H:1V (horizontal to vertical) to nearly level. Refer to Figures 2, Site and Boring Location Plan, in Appendix 1 for general site details.



The main cemetery roadway begins at the entrance from Bow Lane and generally passes through the center of the site. We understand the improvements to the cemetery will include constructing approximately 2,600 linear feet of new roadway along the southern perimeter of the site; constructing a single-story, columbarium structure with associated parking area near the entrance to the cemetery; and evaluating two pavement areas that have exhibited signs of distress in the form of excessive cracking, settlement and heave. The approximate locations of the proposed improvements are shown on Figure 2 in Appendix 1.

#### **TEST BORINGS**

A Geo**Design** representative observed and logged sixteen test borings (B-1 through B-16) that were drilled by Site, LLC on February 24 and 25, 2014. Approximate test boring locations are shown on Figure 2 in Appendix 1 and were located in the field by taping/pacing from existing site features. The ground surface elevation at each test boring location was estimated from the above referenced topographic plan. The locations of the borings and their elevations should be considered approximate. Boring logs are included in Appendix 2.

Borings were made to explore subsurface conditions in the areas of the proposed cemetery improvements. Hollow-stem-auger drilling methods were used to advance the borings to depths of approximately 6 to 12 feet below current site grades. Representative samples were obtained by split barrel sampling procedures in general accordance with ASTM Specification D-1586. The split-barrel sampling procedure utilizes a standard 2-inch O.D. split-barrel sampler that is driven into the bottom of the boring with a 140-pound hammer falling a distance of 30 inches. The blows (i.e. the "N" values) are indicated on the boring logs at their depth of occurrence and provide an indication of the relative consistency of the subsurface materials. Groundwater levels were measured using a weighted tape in the open drill holes and are recorded on the logs.

#### SUBSURFACE CONDITIONS

#### Geologic Mapping

Published surficial and bedrock geological data (1:125,000 scale, Surficial Materials Map of Connecticut, Janet Radway Stone, 1992 and Bedrock Geological Map of Connecticut, John Rodgers, 1985) was consulted. The surficial material within the area of the cemetery is mapped as Glacial Till and is described as a poorly sorted mixture of sand, gravel, silt, and clay with sporadic cobbles and boulders intermixed. The underlying bedrock is classified as light gray, fine to medium grained, Granitic Gneiss.

#### **General Subsurface Profile**

The generalized subsurface profile, as inferred from the subsurface explorations, consists of Topsoil or Asphalt overlying Fill and Glacial Till. A four foot thick layer of Clayey Silt was



encountered below the Fill in Boring B-13. Bedrock was not encountered within the depths explored. The following is a more detailed description of the subsurface materials encountered.

#### Topsoil and Asphalt

Either Topsoil or Asphalt was encountered at the ground surface in all borings. Topsoil was approximately two to fourteen inches thick and consisted of dark brown fine sand and silt, with trace (0 to 10%) amounts roots.

An approximate four inch thick layer of Bituminous Asphalt pavement was drilled though at one location (B-16). The Asphalt at this location was directly on the natural insitu soils no aggregate subbase layer was observed.

#### Fill

Fill was encountered below the Topsoil in Borings B-6, B-7, B-13, and B-14. This Fill was approximately 1 to 7 feet thick and typically consisted of loose to medium dense red brown fine to medium Sand with some (20 to 35%) Silt and varying amount (10 to 35%) amounts of fine to coarse Gravel. Trace (0 to 5%) amounts of Root Fibers were also present in the Fill. The Fill appeared to be derived from the native Glacial Till. Based on the test boring data, the thickness, character, and consistency of the Fill varies between exploration locations.

#### Glacial Till

Glacial Till was encounter in all borings and generally consisted of medium dense to dense red brown fine to medium Sand with some Silt and little amounts of fine to coarse Gravel. Cobbles and possible boulders were inferred in this stratum based on split spoon refusal.

#### **Groundwater Water**

The depth to groundwater was measured in each test boring during drilling. Groundwater was observed in only four borings (B-1 through B-3, and B-16) at depths of about 2 to 5 feet below existing grades, which correspond to between approximately El. 168 to El 179.

Groundwater levels will vary depending on factors such as temperature, season, precipitation, construction activity, and other conditions, which may be different from those at the time of these measurements.

#### LABORATORY TESTING

GeoDesign performed four gradation tests on representative soil samples collected from the test borings in accordance with Method A of ASTM D6913. The gradation tests confirmed our field



classifications and were used to evaluate the subsurface materials for reuse. Refer to Appendix 3 for the results of the gradation tests.

The soil sample tested from the Fill (Boring B-7) was collected at depths ranging from 2 to 4 feet and indicated a sand content of 41%, gravel content of 28%, and silt (particles passing No. 200 sieve) content of 31%.

Soil samples tested from the Glacial Till (Borings B-2, B-9, and B-14) were collected at depths ranging from 2 to 4 feet and indicated a sand content of 46 to 70%, gravel content of 21 to 27%, and silt content of 9 to 27%.

#### GEOTECHNICAL RECOMMENDATIONS

#### Columbarium

Based on our understanding of the project and the subsurface conditions summarized above, we recommend supporting the structure on conventional shallow spread footing foundations with slab-on-grade construction for floor slabs.

The footings should bear below the Fill on undisturbed Glacial Till or on Compacted Granular Fill (CGF) over undisturbed Glacial Till. Topsoil, asphalt, and existing Fill are not considered suitable bearing soils, and must be removed from beneath proposed footings during site preparation. When CGF is used beneath the footings (e.g. in filled areas), we recommend that it be placed one foot beyond the edge of the footings and sloped down and away from the footings at a 1H:1V.

Footings should be constructed at a minimum depth of 42-inches below proposed site grades. The minimum isolated footing size should be 2.5 feet by 2.5 feet, and the minimum wall footing width should be 1.5 feet. We recommend a maximum allowable design bearing pressure of two tons per square foot for footings bearing on the prepared subgrade recommended above (undisturbed Glacial Till or CGF over undisturbed Glacial Till).

Based on the anticipated loads, and recommended minimum footing sizes, we anticipate that the footings will undergo less than one inch of total settlement and less than a half inch of differential settlement. Settlements should occur as the loads are applied and are expected to be complete at the end of construction.

We recommend that floor slabs bear on a prepared subgrade of an eight inches base course layer placed on a prepared subgrade of undisturbed Glacial Till or proof-compacted existing Fill. The base course material should consist of compacted Sand and Gravel or Crushed Stone. Based on the above, for design we recommend a subgrade modulus of 300 pounds per cubic inch.



Slab damp-proofing should be installed between the slab and base course, and consist of not less than 6-mil polyethylene with joints lapped at least 6-inches. Other approved methods or materials may be considered.

The on-site soils are poorly drained and groundwater levels were observed at relatively shallow depths, thus, we recommend installing footings drains to prevent water collecting around the foundations and below the slab. The drains should consist of 4-inch diameter perforated PVC pipe, surrounded by 6-inches of Crushed Stone, wrapped in non-woven filter fabric. Footing drain inverts should be set flush with or up to 6-inches above bottom of footing level. The drains should be gravity drained to daylight or to the site drainage system.

#### Seismic Design

The average Standard Penetration Test "N" value over a 100-foot depth is between 15 and 50. Thus, the site class for the proposed bridges is "D" (Stiff Soil Profile) per the IBC. Based on the standard penetration test results, gradation analyses, and expected design peak ground acceleration at this locale, the saturated site soils are not prone to liquefaction.

#### **Pavement Design**

It is our opinion that the areas where the existing pavements are distressed are due to the absence of a properly prepared roadway subgrade. We recommend for the pavement repair areas, the proposed parking area, and for the proposed roadway area the following minimum pavement sections for passenger cars (Standard) and H-20 truck (Heavy) loading:

Bituminous Pavement	Finish Course	Binder Course	Processed Aggregate Base	Sand-Gravel Subbase
Passenger Car (Standard)	1-inch	1.25-inches	4-inches	5-inches
H-20 Truck (Heavy)	1.5-inches	1.5-inches	6-inches	7-inches

The above recommended pavement section should be constructed on a prepared subgrade. Subgrade preparation recommendations are provided later in this report.

#### MATERIALS AND COMPACTION REQUIREMENTS

#### **On-Site Materials**

The existing Topsoil is not considered suitable for reuse except in non-structural and landscape areas, due to its high organic content. The Glacial Till and existing Fill have a silt content that is generally greater than 20%; thus the high silt content will make the on-site soils difficult to place and compact. We recommended <u>not</u> re-using these materials as backfill below foundations,



slabs, or pavement. These materials will also be sensitive to remolding under construction equipment and vibration when wet. Success in working with (i.e. excavating, traversing, etc.) these materials will depend on their moisture content and prevailing weather conditions.

#### **Compacted Granular Fill**

Compacted Granular Fill (CGF) derived from off-site sources for use as structural fill shall consist of inorganic soil free of clay, loam, ice and snow, tree stumps, roots, and other organic matter; graded within the following limits:

Sieve Size	Percent finer by weight
4-inches	100%
No. 10	30 - 100
No. 40	10 - 90
No. 200	0 - 12

#### Sand and Gravel

Sand and Gravel for use as slab base course and pavement subbase shall consist of hard, durable sand and gravel; free of ice, clay, shale, roots, sod, rubbish, and other organic matter; graded within the following limits:

Sieve Size	Percent finer by weight
2-inches	100%
1/2-inch	50 - 85
No. 4	40 - 75
No. 40	10 - 35
No. 200	0 - 5

#### **Processed Aggregate Base**

Processed Aggregate Base for use as pavement base shall consist of inorganic soil free of clay, loam, ice and snow, tree stumps, roots, and other organic matter; graded within the following limits:

Sieve Size	Percent finer by weight
2 1/2-inches	100%
2-inch	95 - 100
3/4-inch	50 - 75
1/4-inch	25 - 45
No. 40	5 - 20
No. 100	2 - 12



#### **Crushed Stone**

Crushed Stone for use around drains or below foundations and slabs shall consist of sound, tough, durable, rock that is graded within the following:

Sieve Size	Percent finer by weight
5/8-inches	100%
1/2-inch	85 - 100
3/8 inch	15 - 45
No. 4	0 - 15
No. 8	0 - 5

#### **Placement and Compaction**

We recommend a minimum in-place dry density of 95-percent as per ASTM D1557 for materials placed below foundations and slabs. We recommend a minimum in-place dry density of 92-percent as per ASTM D1557 for material placed below paved areas.

Materials should be placed within 2% of their optimum moisture content. We recommend a maximum loose lift thickness of 10-inches assuming a vibratory compactor with a minimum dynamic force of 3,000 lbs. per foot of drum width.

#### **CONSTRUCTION CONSIDERATIONS**

#### **Subgrade Preparation**

The base of subgrade excavations should be free of topsoil, asphalt, water, and loose soils prior to placing structures, compacted fill, pavement or other materials. We recommend the use of smooth edged excavator buckets to make the final excavation to help protect the subgrade. Materials should be placed as soon as possible after excavation so that disturbance of bearing materials does not occur. Should the materials at bearing level become disturbed, the affected materials should be removed.

#### **Proof Rolling**

In areas where Fill will remain at or below slab or pavement subgrade levels, we recommend improving the Fill with a minimum of four passes with a vibratory drum roller having a minimum dynamic force of 6,500 lbs. per foot of drum width. Areas exhibiting instability shall receive additional compaction and/or be over-excavated and replaced with CGF. Proof rolling of the exiting Fill will require careful observation by an experienced geotechnical engineer.

This procedure may have to be modified or abandoned if the subgrade is too saturated or groundwater elevations are found to be higher during construction.



#### **Dewatering**

If required, we expect that temporary groundwater/storm water control can be accomplished by means of shallow trenches and sumps, and grading the excavation to low points.

#### CONSTRUCTION DOCUMENTS AND PLANS

Project plans should be provided to Geo**Design** to review for conformance with geotechnical recommendations. If changes are made, the recommendations in this report will need to be reviewed.

#### **LIMITATIONS**

This report is subject to the limitations included in Appendix 4.

Thank you for the opportunity to be of service. Please feel free to call either of the undersigned if you have questions.

Sincerely,

Daniel F. LaMesa, P.E.

Project Engineer

Joseph W. Kidd, P.E.

Senior Associate

Attachments: Appendix 1 - Figures

Appendix 2 – Boring Logs

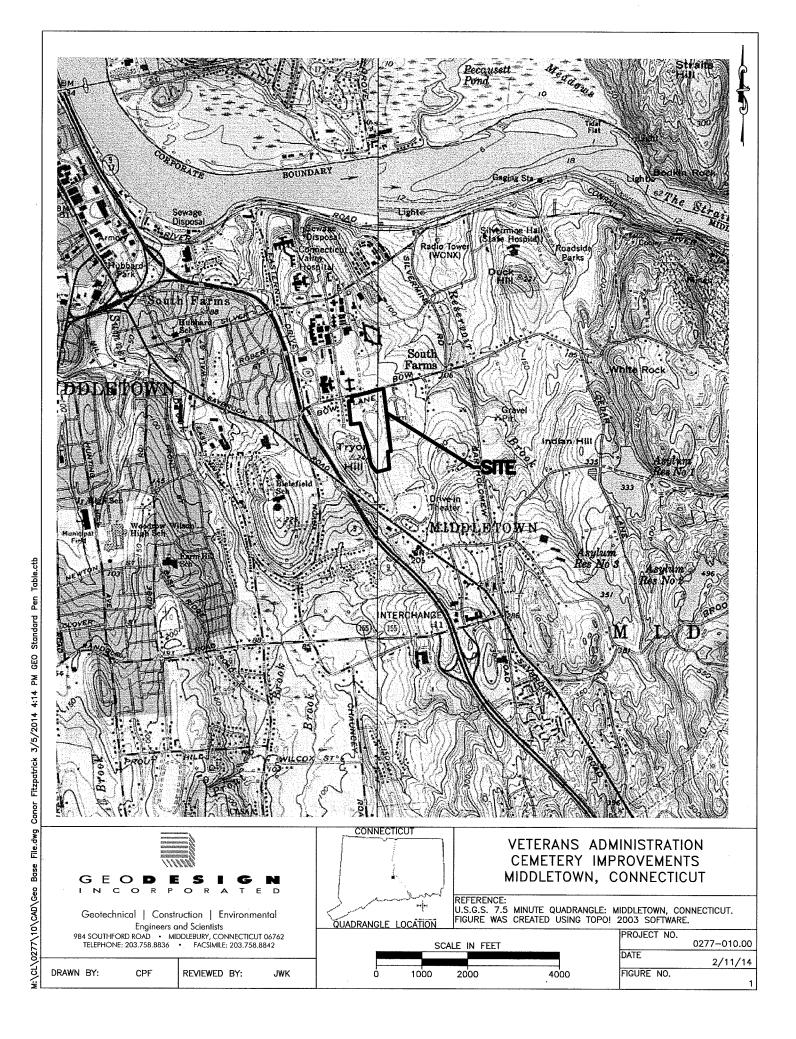
Appendix 3 – Laboratory Test Results

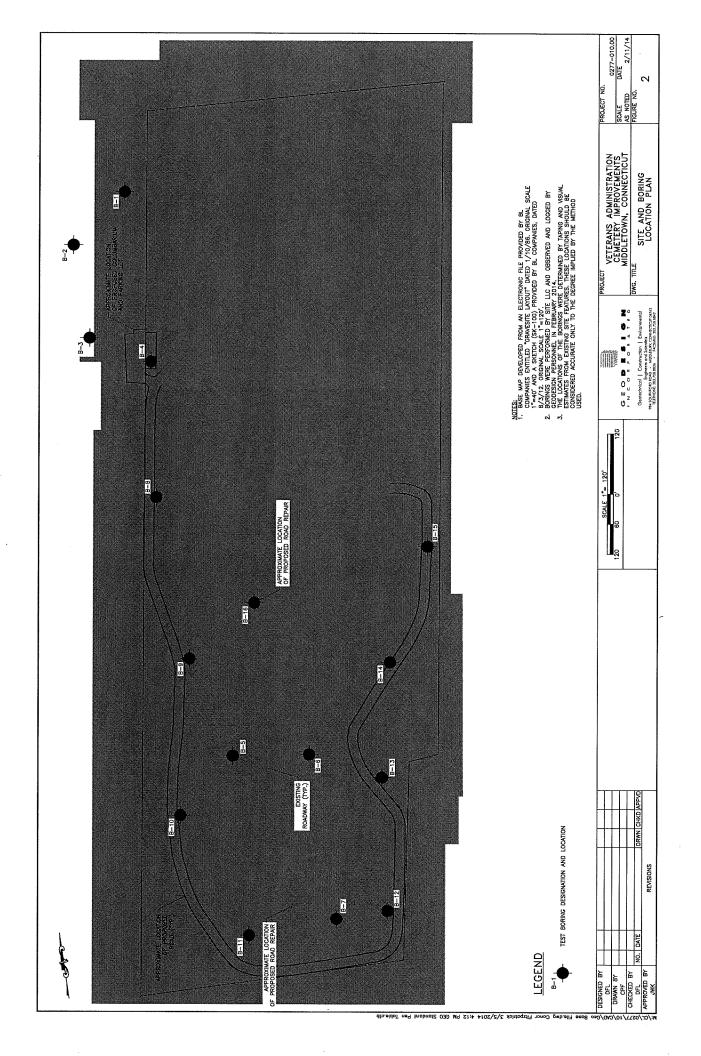
Appendix 4 – Limitations

## Appendix 1

## **Figures**

- Figure 1 Site Locus PlanFigure 2 Site and Boring Location Plan





## Appendix 2

## **Boring Logs**

- Test Boring B-1
- Test Boring B-2
- Test Boring B-3
- Test Boring B-4
- Test Boring B-5
- Test Boring B-6
- Test Boring B-7
- Test Boring B-8
- Test Boring B-9
- Test Boring B-10
- Test Boring B-11
- Test Boring B-12
- Test Boring B-13
- Test Boring B-14
- Test Boring B-15
- Test Boring B-16

#### **BORING LOG** Boring No.: B-1 Project Name Page No.: 1 of 1 NCORPORA **Veterans Administration Cemetery** File No.: 0277-010.00 Geotechnical | Construction | Environmental Engineers and Scientists 984 Southford Road - Middlebury, CT 06762 Telephone: (203) 758-8836 Fax: (203) 758-8842 Improvements Middletown, Connecticut Checked By: DFL Casing: Sampler: Groundwater Observations Site LLC Boring Company: Foreman: John DeAngelis H.S.A Type: Notes (ft) GeoDesign Rep.: Robert Marshall I.D.: 2.25 in. 1.38 in. February 24, 2014 Date Started: Date Finished: February 24, 2014 140 lbs 2/24/14 5.3 168.7 Open hole 0 hours Hammer Wt.: N. Coordinate: E. Coordinate: 30 in. Hammer Fall: Ground Surface Elevation (feet): ATV: CME 300/45 Rig Type: Offset: ft Hammer Type: Automatic - Hydraulic Sample Information Strata Sample Description Casing Blows/ft Description Moisture Content (%) Blows / 6 inch Interval Depth | Depth & Elevation(feet) 6 - 12 12 - 18 18 - 24 0 - 6Classification System: Modified Burmister Topsoil Loose, 0.7 1 SS 24 18 0.0 WH 1 3 Glacial Till 173.3 Top 8": TOPSOIL Bottom 10": brown fine to medium SAND, some 2 SS 24 24 2.0 6 16 6 14 Silt, little fine to coarse Gravel Medium dense, red brown fine to medium SAND. little Silt, little fine Gravel, damp Ă. Medium dense, red brown fine to medium SAND, 3 SS 24 7 12 5.0 13 10 little some Silt, little fine to coarse Gravel Dense, red brown fine to medium SAND, little fine 4 SS 24 7,0 10 13 18 16 to coarse Gravel, little Silt 10 Dense, red brown fine to medium SAND, some 5 SS 24 16 10.0 6 12 17 12 Silt, little fine to coarse Gravel Bottom of Exploration at 12.0 ft 20

Notes: 1) Stratification lines represent approximate boundary between material types, transitions may be gradual.

2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring, NR = Not Recorded.

3) Abbreviations: A = Auger, C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube;
V = Vane; WOR/H = Weight of Rod/Hammer

4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-1

Remarks

BORING

														BC	OR	IN	[G]	LO	3		Bor	ing No.:	B-2
GEODESIGN															Pr	ojec	t Nar	me				ge No.:	1 of 1
			ı	7	C	O R	P Q	R	\ T i				Ve	terans A					Cemete	ry		No.:	0277-010.00
						Engine	Constructi eers and	Scientists						lı Middle				ents	tiout				
		1	Геlер	984 : hone:	Southt (203)	ord Ro	ad - Mi 1836	iddlebur Fax	y, CT 06 c: (203)	762 758-884	12			wilder	SiO.	vvi i,	001	111160	·licut		Cne	скеа ву	: <u>DFL</u>
	ng Co	-	ny:		Site LI								_	Casing			pler:			T		bservations	
	man: Desig		p.:	_		DeAngel Marsha				***************************************			Type:	H.S.A. 2.25 in			8 in.		Date	Depth (ft)	Elev. (ft)		Notes
Date	Star	ted:	-	_	Februa	ary 24, 2	014	Date	Finished:	Februa	ary 24,	2014	Hammer				) lbs	Ţ	2/24/14	1.9	173.1	Open hole	5 minutes
	oordi			vation (	feet).		1°	E. Co 75	ordinate:	-			Hammer Rig Type		CMF		in. 45	Ā	<del></del>				
Stat				WIGOT (		Offset:		, ,		-				Type: Autom				_					
	<b>#</b>					S	ample l	informa	tion					Strata					Sar	nple I	)escri	ption	
Depth (ft)	Casing Blows/ft	ber		Penetration (inches)	very es)	Depth (ft)	I	Blows / 6 i	nch Interv	al	Coring Time (min./ft)	Moisture Content (%)	De	escription		Symbol							
Dept	1   SS   24   4   0.0   1   2   2   3   3   3   3   3   3   3   3												Depth & Elevation	n(feet)					System: Mo			~	
	1 SS 24 4 0.0 1 2 2 3												0.9	Topsoil Glacial 1	7 <u>4.</u> 1	250 21 ½	Loc	ose, bi	own TOF	PSOIL	, dam	p	
		2	ss	24	16	2.0	9	13	18	14			-	Till	\₩		Der	nse r	ed brown	fine to	med	ium SAN	D, some
		_	33	24	10	2.0	3	13	10	14			-		Š		fine	e to co	arse Gra	vel, so	me S	ilt	.D, 30/110
. 5													<u> </u>										
		3	ss	24	15	5.0	7	9	7	7			]		Š		Me	dium (	dense, re	d brov	n fine	e to medi	um SAND,
													_		XX								
		4	SS	24	19	7,0	10	8	11	11	-		-		Š		little	e fine	dense, re to coarse	d brov Grave	vn fine el, littl	e to medi e Silt	um SAND,
40													-		X								
10		5	ss	24	16	10.0	6	11	15	24			1		27.		Ме	dium	dense, re	d brov	n fine	e to medi	um SAND,
													12.0				IITTIE	e tine	to coarse	Grave	∋i, litti	e Silt	
													of E	exploration	63.0								
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1 - BORING LOG MC 2008-2009 0277-010.00 BORING LOGS.GPJ GEODESIGN STANDARD .GDT 3/5/14

<sup>1)</sup> Stratification lines represent approximate boundary between material types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After corning NR = Not Recorded.
3) Abbreviations: A = Auges; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-2

#### **BORING LOG** Boring No.: B-3 Project Name Page No.: 1 of 1 E O D NCORPOR Veterans Administration Cemetery Geotechnical | Construction | Environmental Engineers and Scientists 984 Southford Road - Middlebury, CT 06762 Telephone: (203) 758-8836 Fax: (203) 758-File No.: 0277-010.00 Improvements Middletown, Connecticut Checked By: DFL Fax: (203) 758-8842 Casing: Groundwater Observations Sampler: Site LLC Boring Company: John DeAngelis Foreman: H.S.A. SS Type: Notes (ft) GeoDesign Rep.: Robert Marshall 2.25 in. 1.38 in. I.D.: Date Started: February 24, 2014 Date Finished: February 24, 2014 140 lbs 2/24/14 Hammer Wt.: 4.0 176.0 Open hole 5 min N. Coordinate: E. Coordinate: Hammer Fall: 30 in. Ground Surface Elevation (feet): Rig Type: ATV CME 300/45 Hammer Type: Automatic - Hydraulic 🔻 Offset: ft Sample Information Strata Sample Description Casing Blows/ft Description Symbol Moisture Content (%) Penetration (inches) Coring Ti (min./ft) Blows / 6 inch Interval Type Depth & Elevation(feet) 0-6 6 - 12 12 - 18 18 - 24 Classification System: Modified Burmister Topsoil Very loose, SS 24 16 0,0 1 1 Top 14": TOPSOIL Glacial 178.8 Bottom 2": red brown fine to medium SAND, some SS 24 16 2.0 2 8 15 14 Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel Medium dense, red brown fine to medium SAND, SS 17 9 some Silt, little fine to coarse Gravel Medium dense, red brown fine to medium SAND. SS 24 20 7.0 7 8 9 9 some Silt, little fine to coarse Gravel 10 Dense, red brown fine to medium SAND, some ss 24 24 10.0 8 19 27 42 Silt, little fine to coarse Gravel Bottom 168.0 of Exploration at 12.0 ft 30 Remarks

Notes: 1) Stratification lines represent approximate boundary between material types, transitions may be gradual.

2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring, NR = Not Recorded.

3) Abbreviations: A = Auger, C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube;
V = Vane; WOR/H = Weight of Rod/Hammer

4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-3

BORING

# GEODESIGNINCORPORATED Geotechnical | Construction | Environmental Engineers and Scientists

#### **BORING LOG**

Project Name

Veterans Administration Cemetery

Improvements

Page No.:

Boring No.: B-4 1 of 1

File No.:

0277-010.00

	_	Engineers and Scientists  984 Southford Road - Middlebury, CT 06762  Telephone: (203) 758-8836 Fax: (203) 758-884  g Company: Site LLC  ann; John DeAngelis											Middleto			,				ecked By:DF
Bori	ıg Co	mpa	ny:		Site LL	.c							Casing:	Sar	mpler:			Ground	water (	Observations
Foreman: John DeAngelis									Type: H.S.A.		ss		Date	Depth	Elev.	Notes				
GeoDesign Rep.: Robert Marshall								I.D.: 2.25 in.	1.3	38 in.			(ft)	(ft)						
Date Started: February 24, 2014 Date Finished: February 24,							2014	Hammer Wt.:	14	0 lbs	¥	2/24/14			None observed					
N. C	V. Coordinate: E. Coordinate:										Hammer Fall:	3	0 in.	¥		<u> </u>				
Grou	nd Su	ırfac	e Elev	vation (	feet):		1	80					Rig Type: ATV CMI	E 300	/45	Ť				
Stati	ation; Offset: ft										Hammer Type: Automatic	ç - Hy	draulic	Ā	****					
	Sample Information											Strata				Sar	nple I	Descri	ption	
Depth (ft)	Casing Blows/ft	Number	ə	Penetration (inches)	Recovery (inches)	Depth (ft)	J	Blows / 6 i	nch Interv	al	Coring Time (min./ft)	Moisture Content (%)	Description	Symbol						
Dep	Cas	Nen	Туре	Pen (inc	Rec (inc	Dep	0-6	.6 - 12	12 - 18	18 - 24	S III	Moi	Depth & Elevation(feet)		Class	ification	n System: Mo	dified E	Burmisto	er
		1	SS	24	19	0.0	1	4	8	13			0.7 Topsoil	7/ JX.			dense,			
-										-		Glacial 179.3	1/2	1		TOPSOIL				
$\dashv$	2 55 24 24 20 49 45 40 49										Till					own f	ine to	medium SAND,		
_	2 SS 24 24 2.0 18 15 19 18											,		sor	ne Si	lt, little find	e to co	oarse	Gravel	
														De	nse. r	ed brown	fine to	o med	lium SAND, some	
5														fine to co						
-	3 SS 24 24 5.0 8 13 10 10													Me	dium	dense, re	d brov	vn fin	e to medium SAN	
											<del>                                     </del>				sor	ne Sil	lt, little find	e to co	oarse	Gravel
$\dashv$											-				De	nse r	ed brown	fine t	n mer	lium SAND, some
-		4 SS 24 19 7.0 9 12 20 27													Silt	, little	fine to co	arse (	Grave	ildin oand, som
											ļ									
10													,							
	5 SS 24 21 10.0 12 16 17 22														De	nse, r	ed brown	fine to	o med	lium SAND, some
_	$\neg$											<u> </u>			Silt	, little	fine to co	arse (	Grave	1
-	-	-1											12.0 Bottom 168.0	<i>\$</i>						
4											ļ		of Exploration	1						
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15											-									
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Notes: 1) Stratification lines represent approximate boundary between material types, transitions may be gradual.

2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring, NR = Not Recorded.

3) Abbreviations: A = Auger, C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube;
V = Vane; WOR/H = Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-4

#### **BORING LOG** Boring No.: B-5 Project Name GEODESI INCORPORA Page No.: 1 of 1 **Veterans Administration Cemetery** File No.: 0277-010.00 Geotechnical | Construction | Environmental **Improvements** Engineers and Scientists Middletown, Connecticut 984 Southford Road - Middlebury, CT 06762 Telephone: (203) 758-8836 Fax: (203) 758-Checked By: DFL Fax: (203) 758-8842 Casing: Sampler: Groundwater Observations Boring Company: Site LLC John DeAngelis Foreman: H.S.A. SS Depth Elev. (ft) Type: Date Notes Robert Marshall 2.25 in. 1.38 in. GeoDesign Rep.: I.D.: Date Started: February 24, 2014 Date Finished: February 24, 2014 Hammer Wt.: 140 lbs 2/24/14 None observed N. Coordinate: E. Coordinate: Hammer Fall: 30 in. Ground Surface Elevation (feet): Rig Type: ATV CME 300/45 Offset: ft Hammer Type: Automatic - Hydraulic Sample Information Strata Sample Description Casing Blows/ft Description Coring Time (min./ft) Moisture Content (%) Blows / 6 inch Interval Number Type Depth & Elevation(feet) 0 - 6 6 - 12 12 - 18 18 - 24 Classification System: Modified Burmister Topsoil Loose, 1 SS 24 16 0.7 0.0 1 4 6 10 Glacial Top 8": TOPSOIL Bottom 8": red brown fine to coarse SAND, some 2 ss 24 19 2.0 9 10 10 8 Silt, little fine to coarse Gravel Medium dense, red brown fine to medium SAND, some Silt, trace fine to coarse Gravel Dense, red brown fine to medium SAND, some 3 SS 24 24 5.0 8 16 19 30 fine to coarse Gravel, some Silt Very dense, red brown fine to medium SAND, little SS 24 16 7.0 25 28 30 50/2" fine to coarse Gravel, little Silt Bottom 176.0 10 of Exploration 15 1.) Sampler refusal at 8.7 feet and auger refusal at 9.0 feet. Remarks

Notes: 1) Stratification lines represent approximate boundary between material types, transitions may be gradual.

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3) Abbreviations: A = Auger, C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer

4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-5

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				_			/////	N.					]	Projec	ct Nar	me			ge No.:1 of 1
			1	Geo	C	O R	P C Constructi	S II R A	T I	<b>N</b> ≣ D ntal			Veterans Ad			tion Cemete ents	ry		No.: 0277-010.00
		1	Геlер	984 : hone:	Southf (203)	Engine ord Roo 758-8	eers and ad - Mi 8836	iddlebur	y, CT 06 k: (203)	762 758-884	2		Middlete	own	, Co	nnecticut		Che	ecked By:DFL
Bori	ng Co	mpa	iny:	_	Site LI								<u>Casing:</u>		npler:		Groundw	ater O	bservations
	man; Desig		n '	-		DeAngel t Marsha			•				Type: <u>H.S.A.</u> I.D.: 2.25 in.		SS 38 in.	Date	Depth (ft)	Elev. (ft)	Notes
	Start		φ	-		ary 25, 2		Date	Finished:	Februa	ary 25,	2014	Hammer Wt.:		0 lbs	<b>¥</b> 2/25/14			None observed
	oordi			-					oordinate:				Hammer Fall:		0 in.	¥			
Grou Stati		ırfac	e Ele	vation (		Offset:	1 <sup>*</sup>	79	n the term of the set				Rig Type: ATV CN Hammer Type: Automati			Ā			
Suc							Sample l	Informa	tion				Strata	114	diadilo	<u> </u>	ple D	eccri	ntion
(ft)	Casing Blows/ft	ı		ation ()	È.		<u> </u>		nch Interv	al	Time	re it (%)	Description	Symbol		Sui	pic D	OSOX X	ption
Depth (ft)	Casing	Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	0-6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Depth & Elevation(feet)	0,	Class	ification System: Mo	dified Bu	ırmiste	:r
		1	SS	24	18	0.0	3	2	5	5	ļ		Topsoil 178.	7₩	!	ose, o 3": TOPSOIL			
													**************************************	$\bowtie$	h Bot	ttom 15": red br	own fii	ne to	medium SAND,
		2	SS	24	24	2.0	6	'-	12	11		·	$\bowtie$	sor	ne Silt, little fine	to co	arse	Gravel	
				24 24 2.0 6 7 12 11  Bottom 15": red brown some Silt, little fine to come Silt, little fine to come some Silt, little fine to come fine to coarse Gr														n fine	e to medium SAND, ome Silt
5		3 SS 24 18 5.0 6 4 4 5 6.0														ose,			
													Glacial 173.		Top Silt	o 8": red brown , trace fine Gra	fine to	med	ium SAND, some
		4	\$S	24	24	7.0	7	8	9	11			]		Bot	ttom 10": gray b	rown f	ine to	o medium SAND,
											ļ				հե	ne Silt, trace Ro			
10		5		0.1	10	40.0				40						dium dense, red ne Silt, little fine			e to medium SAND, Gravel
		5	SS	24	19	10.0	4	6	7	10					Ме	dium dense, red	brow	n fine	e to medium SAND,
													12.0 Bottom 167.0	0	SOI	ne Silt, some fir	ie to c	oarse	e Gravei
													of Exploration at 12.0 ft			`			
15																			
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Remarks																			
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1 - BORING LOG MC 2008-2009 0277-010.00 BORING LOGS GPJ GEODESIGN STANDARD .GDT 3/5/14

St. 1) Stratification lines represent approximate boundary between material types, transitions may be gradual.

2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring, NR = Not Recorded.

3) Abbreviations: A = Auger, C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer

4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-6

#### **BORING LOG** Boring No.: \_ B-7 Project Name Page No.: 1 of 1 GEODES I E S **Veterans Administration Cemetery** File No.: 0277-010.00 Geotechnical | Construction | Environmental Engineers and Scientists **Improvements** Middletown, Connecticut 984 Southford Road - Middlebury, CT 06762 Telephone: (203) 758-8836 Fax: (203) 758-Checked By: \_\_\_DFL Fax: (203) 758-8842 Casing: Sampler: Groundwater Observations Boring Company: Site LLC John DeAngelis Foreman: H.S.A. SS Depth Elev. (ft) (ft) Type: Date Notes GeoDesign Rep.: Robert Marshall I.D.: 2.25 in. 1.38 in. Date Started: February 25, 2014 Date Finished: February 25, 2014 140 lbs 2/25/14 Hammer Wt.: None observed N. Coordinate: E. Coordinate: 30 in. Ground Surface Elevation (feet): Rig Type: ATV CME 300/45 Hammer Type: Automatic - Hydraulic 🔻 Sample Information Strata Sample Description Casing Blows/ft Description Moisture Content (%) Coring Time (min./ft) Blows / 6 inch Interval Number Type Depth & Elevation(feet) 0-6 6 - 12 12 - 18 18 - 24 Classification System: Modified Burmister Topsoil Loose, SS 24 20 1 0.0 1 2 3 5 Top 12": TOPSOIL Fill 183.0 Bottom 8": red brown fine to medium SAND, some 2 SS 24 17 2.0 8 7 7 6 Silt, little fine Gravel Medium dense, red brown fine to medium SAND, some Silt, some fine Gravel Medium dense, red brown fine to medium SAND, 3 SS 24 21 5.0 3 9 some Silt, some fine to coarse Gravel Medium dense, 4 SS 24 20 7.0 13 10 8 9 Top 10": red brown fine to medium SAND, some Glacial 176.0 Silt, little fine to coarse Gravel, trace Root Fibers, Till SS 9,0 24 19 9 11 11 9 10 Bottom 10": Brown fine to medium SAND, some Silt, trace fine Gravel, trace Root Fibers 12,0 Medium dense, red brown fine to medium SAND, Bottom little Silt, little fine to coarse Gravel of Exploration at 12.0 ft 20 25 30

Notes: 1) Stratification lines represent approximate boundary between material types, transitions may be gradual.

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V = Vane; WOR/H = Weight of Rod/Hammer

4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-7

GDT

Remarks

																LOG		Bo	ring No.: <b>B-8</b>
GEO <b>DESIG</b> N													P	rojec	t Nai	ne			ge No.: <u>1 of 1</u>
	INCORPORATED  Geotechnical   Construction   Environmental												Veterans Adr	mini	strat	tion Cemet	ery		
				Geo	technic			ion   Er Scientists		ntal			lm	orov	/eme	ents	-		
		7	ГеГер	984 : hone:	Southf (203)	ord Roo 758-8	ad - Mi 836	iddlebur Fax	y, CT 06 c: (203)	762 758-884	2		Middleto	own.	, Co	nnecticut		Cho	ecked By:DFL
Bor	ing Co	mpa	ıny:		Site LL	.c							Casing:	Sar	npler:		Ground	water C	Observations
	man:			-		DeAngeli							Type: H.S.A.		SS	Date	Depth (ft)	Elev.	Notes
	Desig Start		р.:	_		Marsha ary 24, 2		Date	Finished:	Februa	arv 24.	2014	I.D.: 2.25 in.  Hammer Wt.:		88 in. 0 lbs	<b>▼</b> 2/24/14	()	(11)	None observed
	Coordi		:	_					ordinate:				Hammer Fall:		) in.	<u>Y</u>			None observed
		ırfac	e Ele	vation (	. ,			86					Rig Type: ATV CM			<u>¥</u>			
Stat	ion:					Offset:	ft		.•				Hammer Type: Automatic	c - Hy	draulic				<u> </u>
	's/ft			Г	<b>.</b>	S	ample	Informa	tion	<u></u>	1		Strata Description	_		Sa	mple I	Descri	ption
Depth (ft)	Casing Blows/ft	ıber		Penetration (inches)	Recovery (inches)	Depth (ft)	F	Blows / 6 i	nch Interv	al	Coring Time (min./ft)	Moisture Content (%)		Symbol					
Dep	Casi	Number	Type	Pene (incl	Recc (incl	Dep	0-6	6-12	12 - 18	18 - 24	Cori	Con	Depth & Elevation(feet)		Class	ification System: M	odified E	urmiste	er .
		1	SS	24	20	0.0	1	4	10	13			Topsoil 185.7		i	dium dense,			
													Till			o 4": TOPSOIL tom 16": red t		ine to	medium SAND,
		2	SS	24	24	2.0	11	18	16	20					sor	ne Silt, little fir	ne to co	arse	Gravel
																			lium SAND, some
5		3	ss	24	24	F.0	40	42	40	40						, little fine to c			e to medium SAND,
		3	55	24	24	5.0	10	13	10	10					sor	ne Silt, little fir	ne to co	parse	Gravel
		4	SS	24	- 20	7.0	12	15	13	12									e to coarse SAND,
															little	e fine to coars	e Grav	el, litti	e Silt
10											_								
	<u> </u>	5	SS	24	16	10.0	7	14	14	19		,			Me sor	dium dense, r ne fine to coar	ed brov se Gra	vn fin vel, s	e to medium SAND, ome Silt
													12.0 Bottom 174.0	1200		***************************************			
											ļ		of Exploration at 12.0 ft						
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Remarks																			
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Notes: 1) Stratification lines represent approximate boundary between material types, transitions may be gradual.

2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring; NR = Not Recorded.

3) Abbreviations: A = Auger; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer

4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Besides: AC = After coring; NR = Not Recorded.

Boring No.: B-8

BORING LOG MC 2008-2009 0277-010.00 BORING LOGS.GPJ GEODESIGN STANDARD .GDT 3/5/14

#### **BORING LOG**

Project Name

Boring No.:

B-9

Page No.:

\_\_\_1 of 1

			1					R A					Vete	erans				tion C ents	emete	ery	File	No.:	027	77-010.0	00
						Engine	eers and	Scientists						Mide				enis nnect	icut		Ch	alrad D		חבו	
		7	elep	984 : hone:	203)	ord Roc 758-8	ad - Mi 836	iddlebury Fax	y, CT 06 k: (203) :	762 758-884	2			MIG	ai Cic	J V V I 1,	. 00	HILOCI	lout		Cne	ecked B	у:	DFL	
Bori	ng Co	mpa	ny:		Site LL	_c								Cas	ing:	San	npler:			Groundy	vater C	bservation	ıs		_
	man:				John C	DeAngeli	is						Type:	H.S	.A		ss		Date	Depth	Elev.		Notes	s	
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Date	Start	ed:		•	Februa	ary 24, 2	014	Date	Finished:	Februa	ary 24,	2014	Hammer V	Vt. <u>:                                     </u>		140	0 lbs	Ţ.	2/24/14	ļ		None ob	served		_
N. C	oordi	nate	:	_				E. Cc	oordinate:	-			Hammer F	all <u>:</u>		30	) in.	Ţ		<u> </u>					
		ırfac	e Ele	vation (				90					Rig Type:		V CM			<u>¥</u>							
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	s/ft					S	ample l	Informa	tion					strata cription	,				Sar	nple I	escri	ption			
ı (ff)	Casing Blows/ft	oer		Penetration (inches)	very es)	) (ft)	F	Blows / 6 is	nch Interv	al	Coring Time (min./ft)	Moisture Content (%)	Desi	оприо		Symbol									
Depth (ft)	Casin	Number	Type	Penet (inch	Recovery (inches)	Depth (ft)	0-6	6 - 12	12 - 18	18 - 24	Corin (min.	Moist	Depth & Elevation(f	feet)			Class	ification S	System: Mo	odified B	urmiste	er			
		1	ss	24	21	0.0	WH	1	5	10			0.9	opsoil		$\frac{1}{2J_{1}N}$		ose,							
														lacial Till	189.1				TOPSOII						
		2	ss	24	18	2.0	8	8	12	12				1 111					)": red br little find				ı SAN	ID,	
_											-						Me	dium d	ense, re some fi	d brov	n fin	e to med	dium :	SAND,	⊥ I
5		3	ss	24	17	5.0	9	9	10	12	$\vdash$		1						ense, re					SAND.	
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Notes: 1) Stratification lines represent approximate boundary between material types, transitions may be gradual.

2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring; NR = Not Recorded.

3) Abbreviations: A = Auger; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer

4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Bening No.: B-9

LOG MC 2008-2009 0277-010.00 BORING LOGS.GPJ GEODESIGN STANDARD ,GDT 3/5/14

#### **BORING LOG** Boring No.: B-10 Project Name GEODESIGNINCORPORATED Page No .: 1 of 1 Veterans Administration Cemetery File No.: 0277-010.00 Geotechnical | Construction | Environmental **Improvements** Engineers and Scientists Middletown, Connecticut 984 Southford Road - Middlebury, CT 06762 Telephone: (203) 758-8836 Fax: (203) 758-Checked By: DFL Fax: (203) 758-8842 Casing: Sampler: Groundwater Observations Boring Company: Site LLC John DeAngelis SS Type: H.S.A. Depth Elev. Date Notes GeoDesign Rep.: Robert Marshall I.D.: 2.25 in. 1.38 in. Date Started: February 24, 2014 Date Finished: February 24, 2014 Hammer Wt.: 140 lbs 2/24/14 None observed N. Coordinate: Hammer Fall: 30 in. Ground Surface Elevation (feet): Rig Type: ATV CME 300/45 Offset: Hammer Type: Automatic - Hydraulic Sample Information Strata Sample Description Casing Blows/ft Description Moisture Content (%) Penetration (inches) Blows / 6 inch Interval Coring T (min./ft) Туре Depth & Elevation(feet) 6 - 12 12 - 18 18 - 24 Classification System: Modified Burmister Topsoil 1 SS 24 20 0.0 Medium dense, 2 10 22 1 Glacial 194.2 Top 9": TOPSOIL Till Bottom 11": red brown fine to medium SAND, 2 SS 17 24 12 20 13 13 some Silt, little fine to coarse Gravel Dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel Medium dense, red brown fine to medium SAND, 3 SS 24 16 5.0 6 5 6 4 some Silt, little fine to coarse Gravel Medium dense, red brown fine to medium SAND. SS 24 24 7.0 9 8 10 14 some Silt, little fine to coarse Gravel 10 SS 24 10.0 10 33 Dense, red brown to brown fine to medium SAND, some Silt, some fine to coarse Gravel Bottom 183.0 of Exploration at 12.0 ft 15 20 30

LOG MC 2008-2009

BORING

Notes: 1) Stratification lines represent approximate boundary between material types, transitions may be gradual.

2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring; NR = Not Recorded.

3) Abbreviations: A = Auger, C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer

4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-10

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			(	G I	Ec	<b>D</b> R	P C	S I	G A T E	NI D			Veterans Ad	mini	etrat	tion Cometa	ırı,		ge No.: <u>1 of 1</u>	
				Geo	techni				nvironmer	ntal			Im	prov	/eme	ents	,ı y	File	No.: 0277-010	).00
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Bori	ng Co	mpa	ny:		Site LI								Casing:	Sar	npler:		Ground	water C	Observations	
	man: Desig	a Da	.n	_		DeAngel t Marsha							Type: H.S.A.  I.D.: 2.25 in.		SS So:-	Date	Depth (ft)	Elev. (ft)	Notes	
	Start		·	-		ary 25, 2		Date	Finished:	Februa	ary 25,	2014	Hammer Wt.:		38 in. 0 lbs	<b>⊻</b> 2/25/14	<b> </b>	-`-	None observed	
N. C	oordi	nate	:	-					oordinate:				Hammer Fall:		0 in.	¥				
		ırfac	e Ele	vation (		-		90					Rig Type: ATV CM			¥	ļ			
Stati	on:					Offset:	ft						Hammer Type: Automati	c - Hyd	draulic	Ĭ			-	
	t,					S	Sample	Informa	ition				Strata			San	nple I	)escri	ption	
) (ft)	Casing Blows/ft	oer.		ration es)	very 2s)	(ft)	]	Blows / 6 i	inch Interv	nl	Coring Time (min./ft)	Moisture Content (%)	Description	Symbol						
Depth (ft)	Casin	Number   N											Depth & Elevation(feet)		Class	ification Customs Me	die d D		_	
		1	ss	24	20	0.0	1	4	7	5			Topsoil	Z 1 J <sup>N</sup> .		ification System: Mo dium dense,	idiled is	urmste	E	
											<del> </del>		Glacial 189.5 Till			o 6": TOPSOIL				
		2	SS	24	24	2.0	10	10	12	11					Bot	ttom 14": red bi ne Silt, little fin	own fi	ne to	medium SAND, Gravel	
															L					
5																aium aense, re ne Silt, little fin			e to medium SAND Gravel	,
		3	SS	24	21	5.0	5	7	9	11					Me son	dium dense, re ne Silt, little fin	d brove to co	vn fin arse	e to medium SAND Gravel	,
		4	SS	24	18	7.0	12	13	15	16					Me	dium dense. re	d brov	n fin	e to medium SAND	
																ne Silt, some fi				
10																				
		5	SS	24	23	10.0	11	11	9	7			12.0		Me son	dium dense, re ne Silt, some fi	d browne to d	n fine coarse	e to medium SAND e Gravel	,
													Bottom 178.0	) ///						
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Remarks																				

Notes: 1) Stratification lines represent approximate boundary between material types, transitions may be gradual.

2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring, NR = Not Recorded.

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4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-11

- BORING LOG MC 2008-2009 0277-010.00 BORING LOGS.GPJ GEODESIGN STANDARD .GDT 3/5/14

## GEODES INCORPOR

**BORING LOG** 

Project Name

Boring No.:

B-12 1 of 1

Page No .:

File No.: 0277-010.00

Checked By: \_\_\_DFL

Improvements

Veterans Administration Cemetery Middletown, Connecticut

Geotechnical | Construction | Environmental Engineers and Scientists 984 Southford Road - Middlebury, CT 06762 Telephone: (203) 758-8836 Fax: (203) 758-8842 Casing: Sampler: Groundwater Observations Boring Company: Site LLC John DeAngelis Depth Elev. (ft) Foreman: H.S.A. SS Type: Date Notes 1.38 in. GeoDesign Rep.: Robert Marshall I.D.: 2.25 in. Date Started: February 25, 2014 Date Finished: February 25, 2014 140 lbs 2/25/14 Hammer Wt.: None observed N. Coordinate: E. Coordinate: 30 in. Hammer Fall:

Ground Surface Elevation (feet): Rig Type: \_ ATV CME 300/45

	Stati		CII I I	C LIC	vacion (	. ,	Offset:	ft	,,					Hammer Type: Automatic		
									Informa	tion						
		vs/ft		•									·	Strata Description	01	Sample Description
	æ.	Blov	L		tion	2	Æ		Blows / 6 in	nch Interv	a i	Tim	(%)	•	Symbol	
	Depth (ft)	Casing Blows/ft	Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	<u> </u>			I	Coring Time (min./ft)	Moisture Content (%)	Depth &	S	
I	Ă	Ü	+	<b>—</b>				0-6	6 - 12	12 - 18		ŭΞ	20	Depth & Elevation(feet)	Ale	Classification System: Modified Burmister
I			1	SS	24	12	0.0	1	6	14	18	ļ		Topsoil Glacial 190.5		Medium dense, Top 6": TOPSOIL
ŀ			-											Till		Bottom 6": red brown fine to medium SAND, some
ŀ			2	SS	24	20	2.0	18	10	16	13	-				fine to coarse Gravel, little Silt
ŀ							:					ļ				Medium dense, red brown fine to medium SAND,
ŀ	5		<del> </del>													little fine Gravel, little Silt
ł			3 SS 24 19 5.0 6 17 26 21								21			·		Dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
ł		4 SS 24 22 7.0 22 22 20 31										-				Dense, red brown fine to medium SAND, some
ŀ			4 SS 24 22 7.0 22 22 20 31							20	31			•		Silt, some fine to coarse Gravel
-			-		<u> </u>	ļ			<del>                                     </del>			ļ	<u> </u>			
ŀ	10		5	ss	24	21	10.0	12	23	35	38					Very dense, red brown fine to medium SAND,
ŀ			3	33	24	21	10.0	12	23	33	36					some Silt, little fine to coarse Gravel
ŀ														12.0 Bottom 179.0		
ŀ			<del> </del>											of Exploration at 12.0 ft		
ŀ			-					<u> </u>								
4	15		-													
3/5/14																
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BOF																
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MC 2008-2009 0277-010.00 BORING LOGS.GPJ																
3-200	Remarks															
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) MC																

Notes: 1) Stratification lines represent approximate boundary between material types, transitions may be gradual.

2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring; NR = Not Recorded.

3) Abbreviations: A = Auger; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer

4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-12

#### **BORING LOG** Boring No.: B-13 Project Name Page No.: 1 of 1 GEOD INCORPORA **Veterans Administration Cemetery** File No.: 0277-010.00 Geotechnical | Construction | Environmental Improvements Engineers and Scientists Middletown, Connecticut 984 Southford Road - Middlebury, CT 06762 Telephone: (203) 758-8836 Fax: (203) 758-8842 Checked By: DFL Casing: Sampler: Groundwater Observations Boring Company: Site LLC Foreman: John DeAngelis H.S.A. SS Depth Elev. (ft) Type: Notes GeoDesign Rep.: Robert Marshall I.D.: 2.25 in. 1.38 in. Date Started: February 25, 2014 140 lbs Date Finished: February 25, 2014 Hammer Wt.: 2/25/14 None observed N. Coordinate: E. Coordinate: Hammer Fall: 30 in. Ground Surface Elevation (feet): Rig Type: ATV CME 300/45 Offset: ft Hammer Type: Automatic - Hydraulic Sample Information Strata Sample Description Casing Blows/ft Description Coring Time (min./ft) Moisture Content (%) Blows / 6 inch Interval Depth & Elevation(feet) 0-6 6 - 12 12 - 18 18 - 24 Classification System: Modified Burmister Topsoil Loose. 1 SS 24 19 0,0 1 2 5 11 Fill Top 6": TOPSOIL Bottom 13": red brown fine to medium SAND, ss 24 18 2,0 6 4 4 3 some Silt, little fine to coarse Gravel Loose, red brown fine to coarse SAND, little fine Clayey 173.0 Gravel, trace Silt Soft, gray brown Clayey SILT, trace fine Sand SS 2 5 1 2 Medium dense. SS 24 18 7.0 6 7 11 10 Top 12": Soft, gray brown Clayey SILT, trace fine Glacial 169.0 Sand, damp Till Bottom 6": Red brown fine to coarse SAND, little 10 fine to coarse Gravel, trace Silt ss 24 10.0 3 5 6 7 Medium dense, red brown fine to medium SAND, 12.0 Bottom of Exploration at 12.0 ft 20 30 Remarks

Notes: 1) Stratification lines represent approximate boundary between material types, transitions may be gradual.

2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring, NR = Not Recorded.

3) Abbreviations: A = Auger, C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube;
V = Vane; WOR/H = Weight of Rod/Hammer

4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-13

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Geotechnical   Construction   Environmental																nents	;ı y	File	No.: 0277-010	0.00
		1	Геlер				ad - Mi	Scientists i <b>ddlebur</b> Fa:	; y, CT 06 k: (203)	762 758-884	12		Middle	etow	n, C	onnecticut		Ch	ecked By:DFL	
Bori	ng Co	mpa	ıny:	_	Site LL	.c							Casing	1	Sampler		Ground	water C	Observations	
	man:			_		eAngeli							Type: H.S.A.		SS	Date	Depth	Elev.	Notes	
	Desig		p.:	_		Marsha							I.D.: 2.25 in		1.38 in.		(ft) .	(ft)		
	Star			-	rebrua	ary 25, 2	014		Finished: ordinate:	Februa	ary 25,	2014	Hammer Wt.: Hammer Fall:		140 lbs 30 in.	¥ 2/25/14 ¥	-		None observed	
				 vation (	feet):		1	76	ordinate.				1	CME 3		¥				_
Stati	on:					Offset:	ft						Hammer Type: Autom	natic -	Hydraul	ic ¥				
	tl/s		,			S	ample l	Informa	tion				Strata Description		_	Sai	nple I	escri	ption	
æ	Blow			ion	≤	æ		N 16:		,	Lime	8	Description	-	Symoon					
Depth (ft)													Depth & Elevation(feet)	6		ssification System: Mo	viified B	nrmicte	ar.	
													0,7 Topsoil	1	½ Lo	oose.	Allica 15		J.	
	2.0													75.3	~ ''	op 6": TOPSOIL				
		2 SS 24 20 2.0 9 6 4 4 Glacial 174.0 Some Silt, little fine to													own fir e to co	ne to arse	medium SAND, Gravel			
- 5			1 SS 24 20 2.0 9 6 4 4 4 1 1   Cidolal 17-07/21 como Cilt little fine to													d brov trace	vn fin Silt	e to coarse SAND,		
		3	SS	24	10	5.0	2	4	8	7	1			8	M	ledium dense, re	d brov	vn fin	e to medium SAND	
															so	ome Silt, little fin	e to co	arse	Gravel	
		4	ss	24	15	7.0	10	19	23	16									lium SAND, some	
													ng promoterior de la constantina della constanti		fir	ne to coarse Gra	vel, litt	le Sil	t	
10													TO THE PROPERTY OF THE PROPERT		Ø-					
		. 5	ss	24	21	10.0	11	22	23	41					D	ense, red brown	fine to	med	lium SAND, some	
													12,0		Si	ilt, little fine to co	arse (	3rave	l	
													Bottom 16	64.0	×4					
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15									***************************************											
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Remarks																				
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- BORING LOG MC 2008-2009 0277-010.00 BORING LOGS.GPJ GEODESIGN STANDARD GDT 3/5/14

<sup>1)</sup> Stratthcation lines represent approximate boundary between material types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring; NR = Not Recorded.
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4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-14

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		7	[elep				ad - Mi	Scientists iddlebur Fax	y, CT 06 c: (203)	762 758-884	12		N	/liddleto	own,	Co	nnec	ticut		Che	ecked By	: DFL	
Bori	ng Co				Site L									Casing:	San	pler:			Ground	vater C	bservations		
	man;			_		DeAngel							Type: _	H.S.A.		SS	-	Date	Depth			Notes	
Geol Date	Desig		:р.:	-		t Marsha ary 25, 2		Doto	Finished:	Eabrus	25	2014	I.D.: Hammer Wt.:	2.25 in.		8 in. O Ibs	¥	2/25/14	(ft)	(ft)			-
N. C			:	-	10010	ary 20, 2			ordinate:		ary 20,	2014	Hammer Fall:			in.	Ţ	2/23/14			None obs	ervea	
Grou	nd S	ırfac	e Ele	vation (	(feet):			76					Rig Type:	ATV CM	E 300/	45	¥						
Stati	on:					Offset:							Hammer Type	: Automati	c - Hyd	Iraulic	Ā						******
	vs/ft			ı			Sample 3	Informa	tion		To.		Stra Descri					Sa	mple I	)escri	ption		
Depth (ft)	Casing Blows/ft	per		Penetration (inches)	Recovery (inches)	Depth (ft)	1	Blows / 6 i	nch Interv	al	Coring Time (min./ft)	Moisture Content (%)		•	Symbol								
Dep	Casi	Number	Type	Pene (incl	Recc (incl	Dept	0-6	6 - 12	12 - 18	18 - 24	Cori (min	Cont	Depth & Elevation(feet	)		Classi	ification	System: M	odified B	urmiste	er		
		1	ss	24	15	0.0	1	2	6	7			Tops		7, 1 <sup>N</sup>		ose,	ODOOU					
													Glac Til					OPSOIL ": red bro		e to r	nedium S	SAND, littl	e
		2	SS	24	21	2.0	4	10	14	17								fine to c					-
- 5																Me son	dium ne Sil	dense, re t, little fir	ed brov	n fine arse	e to medi Gravel	um SANE	),
		3	SS	24	16	5.0	7	5	8	7						Me	dium		ed brov	n fine	e to medi	um SANE	),
		4	SS	24	21	7.0	7	10	20	18												se SAND,	
																		i, little fir				,	
10																							
		5	SS	8	6	10.0	22	50/2"					10.7 Botto	om 165.3	7/6%	Ver son	ry den ne Sil	se, red b i, some f	rown fi ine to d	ne to coarse	medium e Gravel	SAND,	i
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Remarks																							
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Note	s: 1) S	trati	ficatio	n lines 1	epreser	t approxi	mate bound	lary between	en material	types, tran	sitions n	nay be gr	adual.	<b>.</b>		1							
	3) /	vate: oring Abbre	g NR eviatio	= Not F ns: A =	ecorde Auger;	been mad i. C = Core	e at umes a ; MC≔Mac	na unaer c	onaitions st	ated, Iluct	lations o	of ground	water may occur e; SS = Split Spoo				_			ments w	ere made. A	C = After	
	4) I	ropo	vane; ortions	WOR/H Used: ]	i = Weig Frace =	ди от Кос 1-10%; L	i/Hammer ittle == 10-2	0%; Some	= 20-35%;	And = 35-	50%								1	Borin	1g No.:	B-15	

1 - BORING LOG MC 2008-2009 0277-010,00 BORING LOGS,GPJ GEODESIGN STANDARD ,GDT 3/5/14

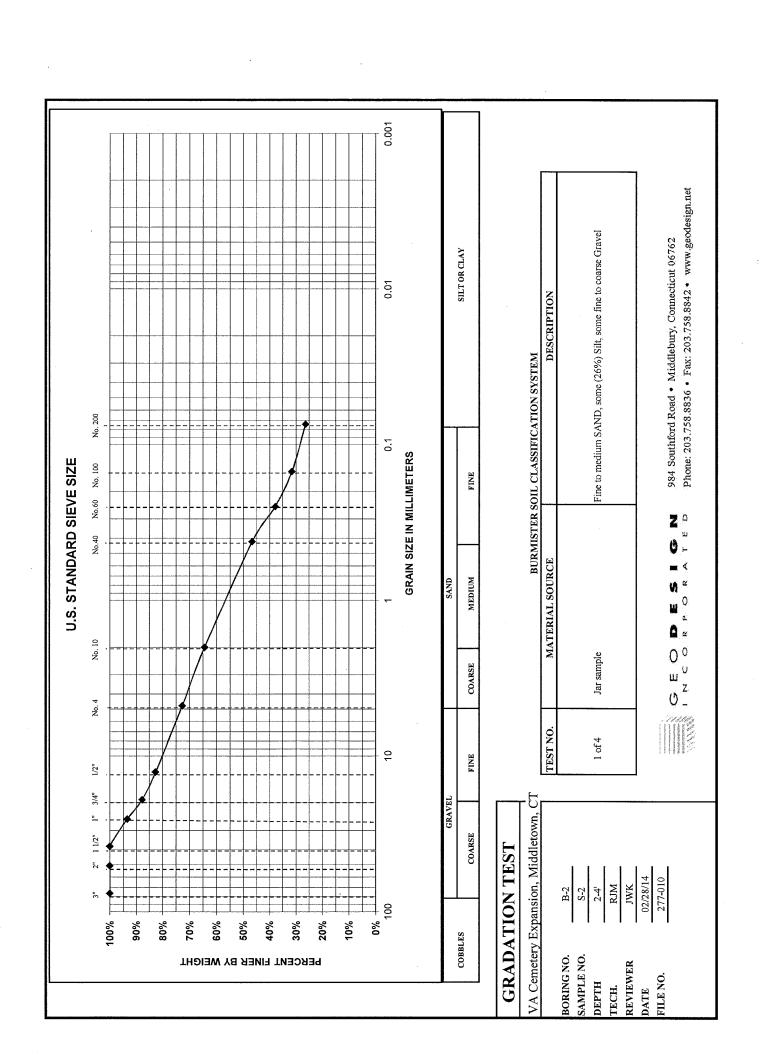
														В	OF	RIN	[G]	LO	G			Bor	ing No.:	E	3-16
							/////	3							P	rojec	t Nar	ne					ge No.:		of 1
			•	S E	ႄၙင	O R	E P O	S I	G TE	N D			Vet	erans /	٩dr	mini	strat	tion	Ceme	eter	,				
				Geo	technic			ion   Er Scientists	vironmer	ntal					lmp	orov	eme	ents			,	File	No.:	0277	<b>7-010.00</b>
		7	Telep				ad - Mi	iddlebun	y, CT 06 c: (203)		2			Middl	etc	own,	Co	nne	cticut			Che	ecked By	/:	DFL
Bori	ng Co	ompa	ıny:		Site LI	.C								Casin	<u>g:</u>	San	opler:			Gr	oundy	vater O	bservations		
Fore				-		DeAngeli Marsha							Type:	H.S.A			SS.		Date		epth (ft)	Elev. (ft)		Notes	
Geol Date	_		:р.:			ary 25, 2		Date	Finished:	Februa	ary 25,	2014	I.D.: Hammer	2.25 ii Wt.:	n.		8 in. O Ibs	<u>¥</u> .	2/25/1				Open hol	e 10 mi	nutes
N. C				_				E. Co	ordinate:				Hammer 1				in.	¥							
Grou Stati		urfac	ce Ele	vation (		Offset:	ft 18	81					Rig Type:	ATV		E 300/		¥.		-					
Stati	JII.							Informa	tion					Strata	mauc	1	naunc	1 -		Come	da D	escri			
	ws/ft		Γ		Γ		I				e e			scription		loc l			,	Samp	ne L	escri	ption		
ı (ft)	Casing Blows/ft	Ser		Penetration (inches)	very es)	(f)	F	Blows / 6 i	nch Interva	al	Coring Time (min./ft)	Moisture Content (%)				Symbol									
Depth (ft)	Casin	Number	Type	Penet (inch	Recovery (inches)	Depth (ft)	0-6	6 - 12	12 - 18	18 - 24	Corin (min.	Mois	Depth & Elevation	feet)			Class	ificatio	n System:	· Modit	fied B	nrmiste	r		
	1 SS 24 16 0.0 22 10 11 9 Asphalt 480.7 M Glacial													Me	dium	dense	,								
	Gladai Till 🔻																						CANE		
																				SANL	'				
	2 SS 24 16 2.0 6 7 11 6 Bottom 1 some fin																			ium S	AND,				
5		3	SS	24	6	4.0	9	11	11	9									lt, little				Gravel e to med	ium C	
			_										6.0 E	ottom	175.0	2322	sor	ne Si	It, little	fine t	to co	arse	Gravel	ium 5	4ND,
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s	1.)	Pu	shed	Cob	ble or	ı first a	attempt	at S-1 v	vith poor	r recove	ry, re	drove	S-1 2 fee	et North v	vith	3" sp	oon 1	for in	crease	d rec	over	y.			
Remarks																									
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Note	s: 1) S	Strati	ificatio	n lines	epresen	t approxi	mate bound	dary between	en material	types, tran	sitions n	nay be gr	adual.											-	
	2) (	Wate corin	erieve er NR	readinį = Not F	gs have t Recorded	been mad 1.	e at times a	and under c	onditions st	lated, flucti	nations o	of ground	water may o					-				ments v	vere made. A	AC = Aft	er
		٧= ۲	Vane;	WOR/F	I = Weig	tht of Roc	d/Hammer		= 20-35%;			on samp	io, as — spilt	Aroni, ver .	د.د	ліўП Д	o obur s	эриоп; t	or — Spelt	у типе		Bori	ng No.:	B-1	6

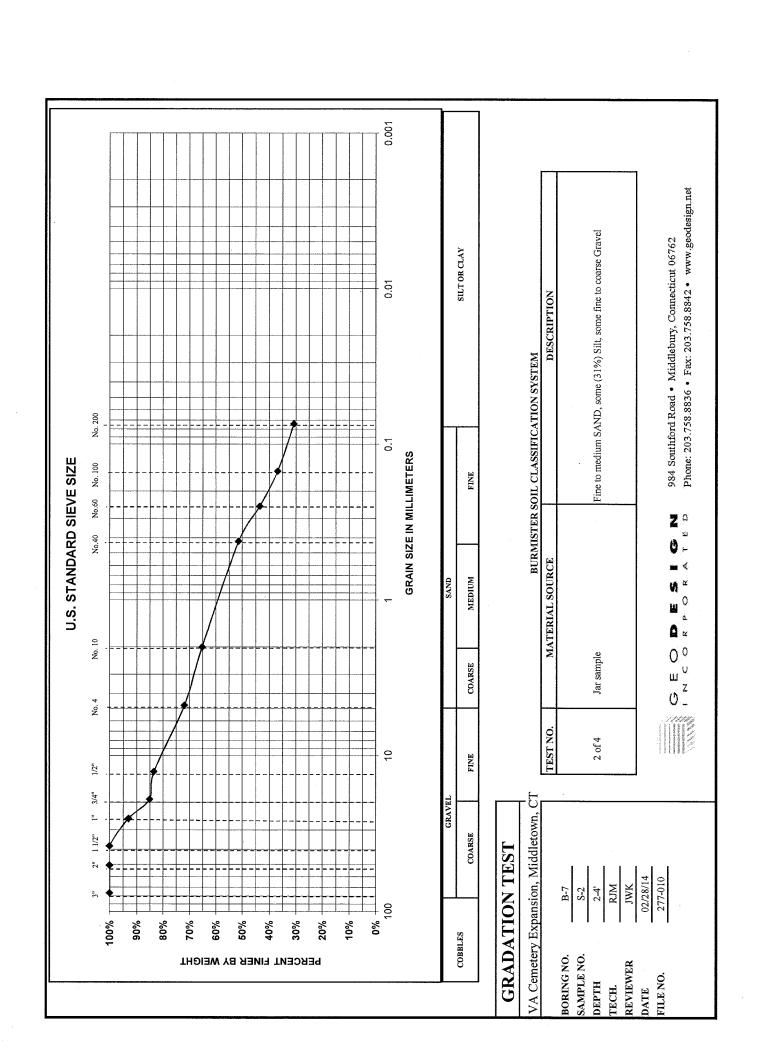
1 - BORING LOG MC 2008-2009 0277-010.00 BORING LOGS.GPJ GEODESIGN STANDARD .GDT 3/5/14

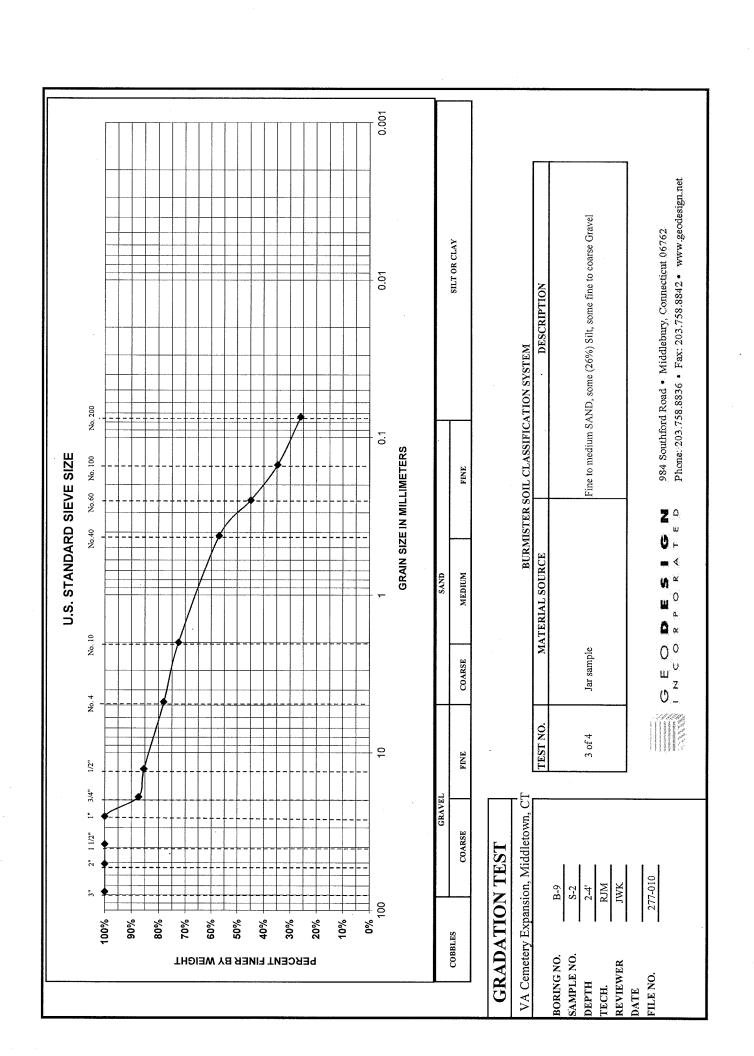
## Appendix 3

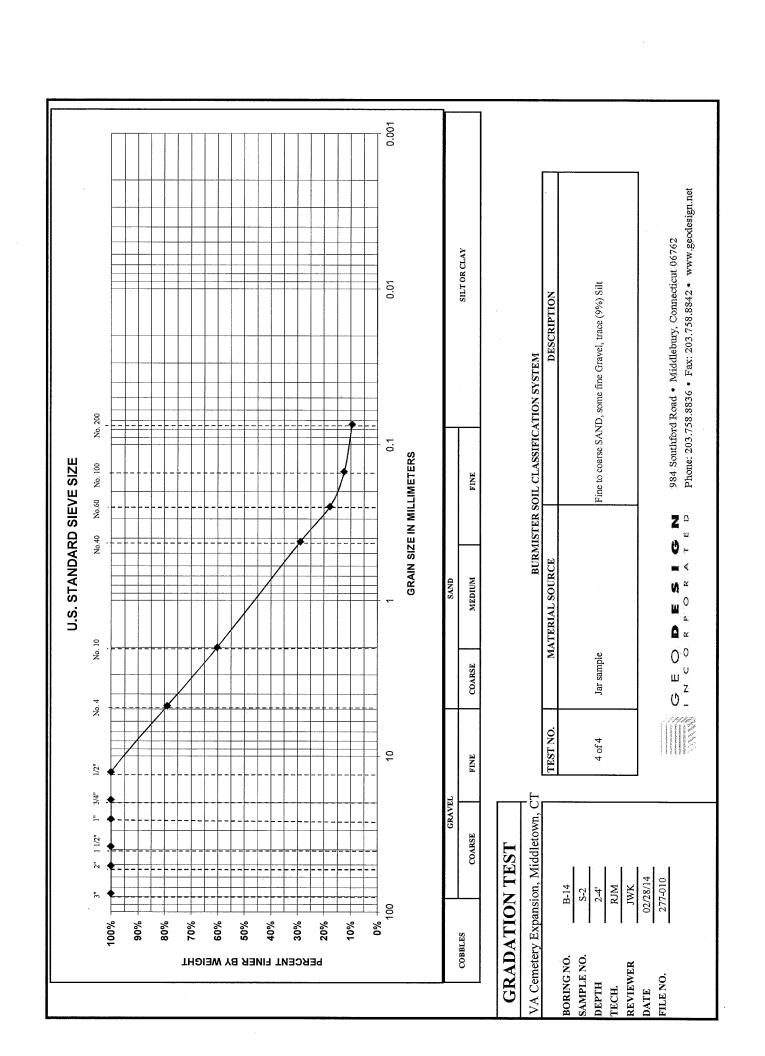
## **Laboratory Test Results**

- Test Boring B-2, S-2, Gradation Test
- Test Boring B-7, S-2, Gradation Test
- Test Boring B-9, S-2, Gradation Test
- Test Boring B-14, S-2, Gradation Test









Appendix 4

Limitations

#### GEOTECHNICAL LIMITATIONS

#### **Explorations**

- 1. The analyses and recommendations submitted in this report are based in part upon the data obtained from subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.
- 2. The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more erratic. For specific information, refer to the boring logs.
- 3. Water level readings have been made in the drill holes at times and under conditions stated on the boring logs. These data have been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, and other factors occurring since the time measurements were made.

#### Review

4. In the event that any changes in the nature, design or location of the proposed improvements are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing by Geo**Design**. It is recommended that this firm be provided the opportunity for a general review of final design and specifications in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications.

#### Use of Report

5. This report has been prepared for the exclusive use of BL Companies and their design team for specific application to the proposed improvements to the Veterans Administration Cemetery located at 317 Bow Lane in Middletown, Connecticut, in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.